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B-1 Stabilizer Shop proves effective, efficient

Darren D. Heusel - Staff Writer

When the Air Force launched its Lean/Cellular transformation initiative several months ago, the B-1 Horizontal Stabilizer Shop at the Oklahoma City Air Logistics Center was one of the first shops in Bldg. 3001 already onboard with the program.

That transition has allowed the "Stab Shop" to develop into an efficient unit capable of providing depot-level maintenance on 30 B-1B horizontal stabilizers a year and extending the life of the aging weapon system by an additional 20,000 flying hours per aircraft.



Sheet metal mechanics Joey Jameson, left, and John Moy use fasteners to secure the skin to a B-1 horizontal stabilizer so they can accurately rivet the materials together. (Photo by Margo Wright)

"In the sheet metal business, you're constantly shaking down parts, performing inspections and evaluations to determine those 'hard broke' items," said Angie Weaver, chief of the Sheet Metal Composite Branch. "Depending on the outcome, if any defects are found, you deal with them accordingly."

Ms. Weaver said it's that flexibility and eagerness to meet mission requirements exhibited by the 42 employees of the Stab Shop that has helped them earn a solid reputation by members of the OC-ALC leadership.

The shop's performance and their implementation of Lean initiatives have also earned them a wealth of recognition from the center and the major command over the past several months.

"We've made a lot of improvements in the Stab Shop," Ms. Weaver said. "We've improved our shop capacity in terms of floor space and we've improved our tool control accountability process, to name a few."

Tony Bangart, Bomber Programmed Depot Maintenance and Maintenance of Items Subject to Repair Section chief, said, "Not only is our mission to support the warfighter, but we support the PDM line as well."

The B-1 Stabilizer Shop was established in 2001 after researchers discovered harmonic cracking in the horizontal stabilizer substructure. Prior to this, as many as 180 interim repairs had been developed to cut out and splice defective spars and rib lines in the stabilizers.

But it wasn't until 2001 when the ALC sprang into action to design, develop and build six B-1B horizontal stabilizer prototypes that a permanent solution was found.

TINKER AIR FORCE BASE
A TRADITION OF EXCELLENCE

Stab Shop personnel managed to accomplish all this while establishing a Lean facility and were busy becoming the first to implement the Consolidated Tool Kit process, a best practice solution of converting 47 Individual Tool Kits to the current seven CTKs.

This allowed the shop to reduce the original overhaul of the B-1B horizontal stabilizer from 4,500 man hours to 3,600 and reduce its staff from 63 personnel to the current 42.

"Part of the Lean process involves learning as you go," said Mike Smith, unit supervisor for the Stab Shop. "What we've been able to do is employ a team concept that involves engineering, planning, production and material."

Part of the workload itself entails locally manufacturing six rib lines consisting of 256 separate parts and scheduling for 30 B-1B stabilizers, or a total of 7,680 individual parts per year.

Beefing up the horizontal stabilizers on the tail sections of the Air Force's 93 B-1B Lancers have made the stabilizers safer and sturdier.

Horizontal stabilizers, which measure 25 feet long, 8 feet wide and 1 foot deep, provide the bomber's pitch and roll. They are made of aluminum skins with 25 titanium spars running lengthwise and a number of aluminum ribs crisscrossing the spars.

During the repair, workers remove the upper aluminum skin, which has about 3,500 fasteners per side, take out the old spars and ribs and replace them with new, sturdier parts.

Mr. Smith said maintenance on the stabilizers is set up on a rotational basis so that as one set comes off an airplane an overhauled set is ready to replace it.

The Stab Shop is due to be phased out of production in 2007, but Smith said his crews have begun taking on additional repairs and could eventually be responsible for another modification on the B-1B, which would entail strengthening the structure on the No. 1 and No. 2 flaps.

"These people have always stepped up to any challenge put before them," Ms. Weaver said. "This additional future workload should present new challenges, but I know they'll be ready."

"The trick is to be in a position to handle any unplanned work that comes in and deal with any discrepancies that are found."

Garin Agnew came over to the Stab Shop from the TF-33 engine line where he had worked for 13 years because he was looking for a new challenge.

"It was like starting over," he said. "It's an interesting job. It's been challenging, but it's been a good project. We've had a lot of support from other shops. Most of the folks don't want to leave here because the facilities are great."

Mr. Bangart said as the center began implementing the Lean transformation initiative, the B-1 Stabilizer Shop was used as a test bed and laid the foundation for all the sheet metal shops.

The results, he said, include improved processes in material ordering, parts tracking, tool handling and more.

"The stab work we get in here is known," Mr. Bangart said. "It's the 'T' jobs, or unplanned work, that forces these folks to be flexible and step up to the plate to meet the challenges involved."

In fact, Ms. Weaver said, "Any time the ALC hosts a tour for VIPs, we're always on the list."

That's not always a good thing, though. Last month, one day before a scheduled VIP visit, one of the building's main water lines broke and flooded the Stab Shop floor, dumping an estimated 100,000 gallons into the area.

According to Mr. Bangart, the leak started around 1:30 p.m. and didn't end until around 3:15 a.m. the next morning. A group of VIPs was scheduled to visit the shop at 2 p.m. that same day.

In demonstrating their flexibility and ability to respond to any situation, Stab Shop crews worked around the clock and managed to clean up the area ahead of time, making it possible to go ahead with the tour as planned.

"We got a call from the front office and we explained to them what had happened," Mr. Bangart said. "We told them that we had quite a mess on our hands and they said they understood, but would like to bring the VIPs by anyway."

Meeting challenges like this is just one of the reasons the Stab Shop has been so successful.

"The Stab Shop was actually layed out in a Lean design before the Air Force launched its Lean/Cellular initiative," Ms. Weaver said. "Sometimes, when we are accommodating a tour, we will say we were Lean before Lean wasn't cool."

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